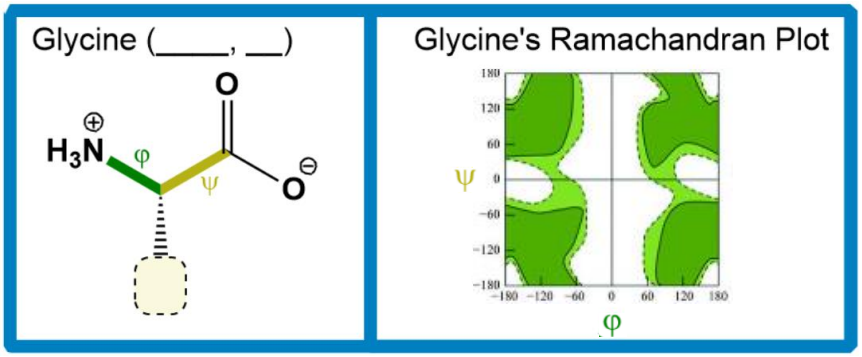
CONCEPT: ATYPICAL RAMACHANDRAN PLOTS

●Both _____ & _____ have unique Ramachandran plots.

Glycine Ramachandran Plot

●Gly has a _____ R-group that does _____ limit φ or ψ bond rotations (_____ steric hindrance).

EXAMPLE: Fill in the R-group of Glycine.



PRACTICE: Why does Gly have a uniquely interesting Ramachandran plot in comparison to the other α-amino acids?

a) Its small R-group restricts the φ and ψ bond rotations via noncovalent interactions.

b) Glycine's R-group forms strong hydrogen bonds that greatly frees its bond rotations.

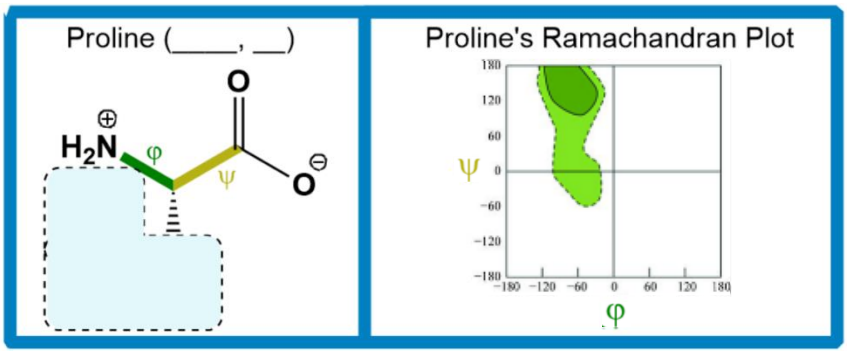
c) Gly's R-group avoids steric hindrance & expands regions of energetically permissible φ and ψ bond angles.

d) b and c.

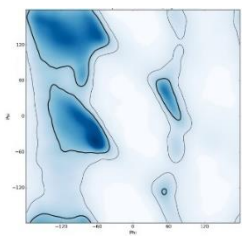
Proline Ramachandran Plot

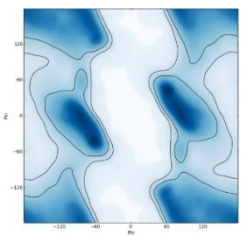
□ Pro has a _____, cyclic R-group that greatly _____ φ and ψ bond rotations.

EXAMPLE: Fill in the R-group of Proline.



PRACTICE: The Ramachandran plot of Leu most likely resembles which of the following plots?

a) 

b) 

c)